

CSE 259 - Logic in Computer Science (Spring 2024)

Recitation-8

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Project-2: Task 3

Current code

```
/* ----- */
/* WRITE YOUR CODE FOR TASK-3 HERE */
/* MODIFY THE CODE SO THAT playerA AND playerB AUTO-COMPETE */
/* ----- */

play(Board) :-
    /* move playerA */
    /* get_command asks the user for the move to be made.
    | modify this so that playerA moves on its own */
    .. get_command(Command),
    .. execute_command(Command, Board, NewBoard),

    .. /* move playerB */
    .. execute_command(playerB, NewBoard, NextNewBoard),
    .. play(NextNewBoard).
```

Project-2: Task 3

- There are 3 execute_command that are called from play()
- The first one is for inputs taken from user. The second one is for automated players. And the third one is for handling unexpected situations.

```
/* execute the move selected */
execute_command(Move, Board, NewBoard) :-
    parse_move(Move, From, To),
    move(Board, From, To, white, Piece),
    make_move(Board, From, To, NewBoard), !.

execute_command(Player, Board, NewBoard) :-
    respond_to(Player, Board, NewBoard), !.

execute_command(X, Board, _) :- ... % Use to catch unexpected situations
    write('What?'),
    halt(0).
```

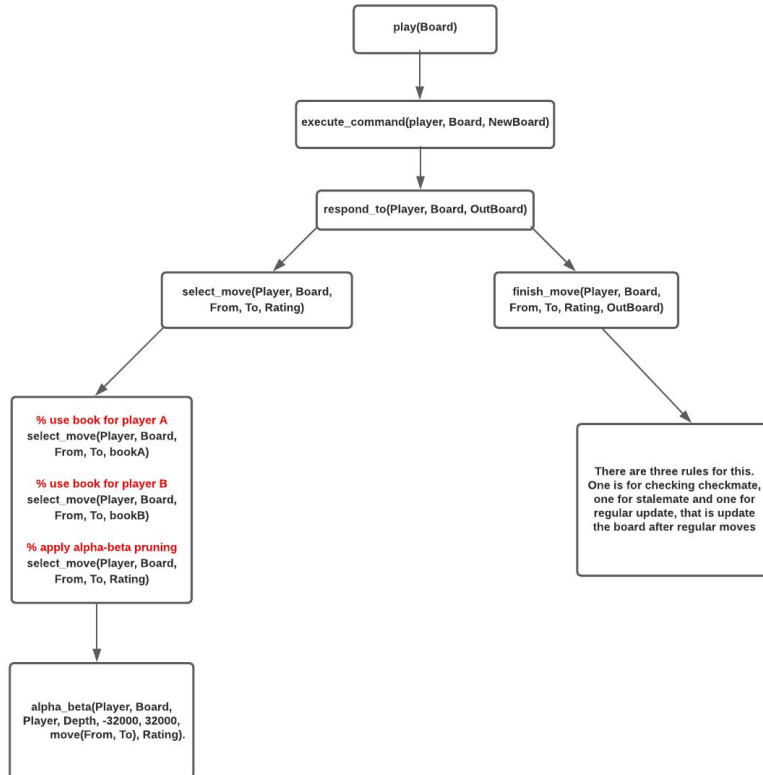
Project-2: Task 3

- Change like the following so that playerA plays on its own

```
/* ----- */
/* WRITE YOUR CODE FOR TASK-3 HERE */
/* MODIFY THE CODE SO THAT playerA AND playerB AUTO-COMPETE */
/* ----- */

play(Board) :-
    /* move playerA */
    /* get_command asks the user for the move to be made.
    | modify this so that playerA moves on its own */
    ... execute_command(playerA, Board, NewBoard),
    ... /* move playerB */
    ... execute_command(playerB, NewBoard, NextNewBoard),
    ... play(NextNewBoard).
```

Project-2: Task 2



- Play called `execute_command`
- `execute_command` calls `respond_to`
- `respond_to` calls 2 rules
 - `select_move`: select a move
 - `finish_move`: finish moving the selected move
- `select_move` has 3 rules. One is for playerA. Start from `select_move` of playerB and start mimicking the code

Project-2: Task 2

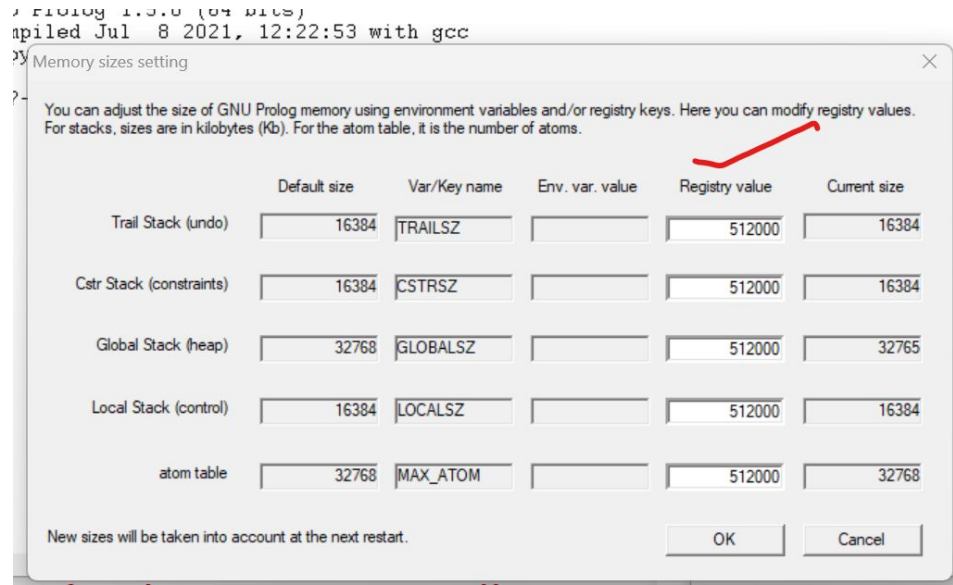
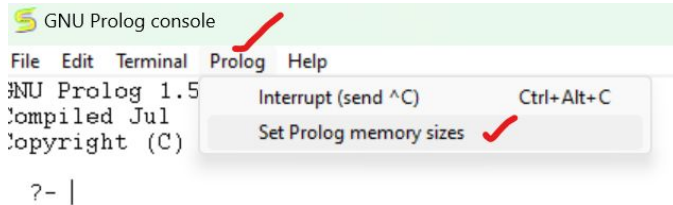
- Look carefully - bookB in select_move appears 3 times. bookA appears 2 times. So, we start working from here

```
finish_move(Player, NewBoard, From, To, Rating, OutBoard) :-
    select_move(Player, Board, From, To, bookB) :-... % Use book for playerB
    player(Player, black),
    bookB(Board, From, To), !.
select_move(Player, Board, From, To, Rating) :-... % time for ALPHA-BETA
    (player(Player, white) -> ply_depthA(Depth);ply_depthB(Depth)),
    alpha_beta(Player, Board, Player, Depth, -32000, 32000,
    move(From, To), Rating).
```

```
-templates > Chess > chess_solution.pl
finish_move(Player, NewBoard, From, To, Rating, OutBoard) :-
    select_move(Player, Board, From, To, bookA) :-... % Use book for playerA
    player(Player, white),
    bookA(Board, From, To), !.
```

Project-2

- Change memory if your program is unexpectedly quitting



Project-2

- For Linux or mac use:

```
export LOCALSZ=512000;export GLOBALSZ=512000;export  
TRAILSZ=512000;export CSTRSZ=512000;export  
MAX_ATOM=512000; gprolog
```